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HUBBLE SPACE TELESCOPE

VISION 2000

CONFIGURATION MANAGEMENT PLAN

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HST VISION 2000
Configuration Management Plan

Approved By: _____

A. John Gainsborough
Manager
HST VISION 2000

_____

Ann C. Merwarth
Project Manager
HST Operations & Ground Systems Project

Goddard Space Flight Center
Greenbelt, Maryland

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1.0 INTRODUCTION

The objective of configuration management (CM) is to promote an unambiguous understanding of all subsystems and their interfaces and of any changes to them through the maintenance and control of relevant descriptive documentation.

1.1 Scope & Purpose

The purpose of this Plan is to establish and describe the overall systems change control process and the procedures for maintaining baseline documentation applicable to VISION 2000 systems development. The process and procedures are formulated for easy transition to the operations & maintenance phase. The Configuration Management Plans which are required for each of the separate functional systems comprising VISION 2000 (Level IV) shall be consistent with this Plan.

1.2 VISION 2000 System Description

VISION 2000 is an HST Operations & Ground System Project reengineering initiative to streamline and modernize HST's overall operations and ground support systems in order to substantially reduce operations and systems maintenance costs by the year 2000. It is to be accomplished without impacting either the ongoing HST science-observing program or preparations for future Servicing Missions. The VISION 2000 objectives, which are controlled by the VISION 2000 Steering Group, are:

- Improve reliability & enhance current scientific capabilities
- Reduce cost of operations & maintenance by 50% by the year 2000.
- Support the Advanced Camera development beginning late 1996.
- Provide shadow support for the 1997 Servicing Mission
- Provide full mission support to the 1999 Servicing Mission
- Complete transition and be fully operational by the year 2000.

It is expected that in its final configuration, the VISION 2000 operational system will provide for single pass, autonomous processing from completed calendars to command loads, fully automated trend checking as well as limit checking to assure current and future HST health, instant network access to all engineering data required to analyze and respond to anomalies, relative independence from space communication scheduling constraints, and rapid reconfigurability to respond to event driven requirements.

VISION 2000 is organized into five areas with the following functionality:

Control Center System (CCS) - Real-time monitoring & commanding, engineering data management and analysis, spacecraft sustaining engineering.

Planning & Scheduling System (P&S) - Proposal processing and science user proposal interface, spacecraft planning & scheduling, timeline management.

Science Data Processing System (SDP)- Data capture and Level I through III science data processing, archiving and user archive interface.

SSM Flight Software Development (SSM) - Rehosting DF224 & COP functions to 486-based computer, enhancing spacecraft autonomous functionality.

Payload Flight Software Development (PFS) - Software maintenance of the NSSC-I science instrument support computer, upgrading to support new science instrumentation delivered in future Servicing Missions.

For each functional area, development is accomplished by means of an integrated, cross-organizational, product development team (PDT). During the development phase of VISION 2000, system engineering and transition planning is provided by the Systems Architecture Board (SAB) which also controls overall requirements and serves to resolve inter-PDT issues. It includes representation from the PDTs and reports to the VISION 2000 Manager.

1.3 Applicable Documentation

The following documents establish the requirements addressed in this Plan.

GMI 8040.1A	Configuration Management, April 1975
SCM-1020 Rev C	HST Configuration Management Plan, June 1992
SCM-1023	HST Configuration Management Procedures, January 1993
TBD	VISION 2000 Operations Concept, February 1995
TBD	VISION 2000 System Architecture Board Charter, 1995
TBD	VISION 2000 Product Development Team Commitments, TBD

1.4 Plan Maintenance

This Plan may be updated as necessary. Changes require approval of the VISION 2000 Manager and are boarded by the Systems Architecture Board. Conformance of Level IV functional area plans is the responsibility of their respective configuration management officers.

2.0 CONFIGURATION MANAGEMENT SYSTEM

2.1 Concept

The guidelines for the streamlined configuration management process are:

- Changes within a specific (functional) system should be made and controlled by the local user-maintainer working group in order to expedite change implementation.
- Document maintenance and revision is the responsibility of the functional groups.
- All documentation and change management information shall be easily accessible to all authorized personnel.
- Change implementation is to be always expedited thereby eliminating the need for prioritization categories for change requests.

In conformance with these guidelines, each PDT or functional group is responsible for managing its configuration items (CI) for each completed baseline. Although the PDTs are expected to resolve inter-PDT issues through mutual discussions, the Systems Architecture Board (SAB) serves to track such agreements and, if irreconcilable differences arise, to serve as the forum for their resolution and management. Within each functional area listed in Sec. 1.2, a local Engineering Change Board (ECB), including both operators and maintainers, provides change management. While the SAB may mediate global engineering changes, their boarding resides within the functional groups. The term, ECB, is used rather than the more traditional CCB to convey the technical emphasis of the VISION 2000 change process.

2.2 Change Classes

Change class definition is modified from that described in GMI 8040.1A. In the VISION 2000 system:

Class 1 changes to configured items are those which have global impacts crossing functional/organizational boundaries. Changes impacting only VISION 2000 functional areas and the Flight Systems & Servicing Project (Code 442) are managed by the PDTs and the SAB. If external organizations or functional areas are impacted, the HST Level II CCB may become involved in managing the change.

Class 2 changes to configured items are those which affect only the local functional group and configuration management responsibility for these changes is delegated to the functional group or PDT.

Class 3 change is introduced to denote user changes solely affecting his/her workplace and do not involve any formal configuration management. Although these changes are "uncontrolled" their description and status may be inputted into the system as a means to disseminate system improvement information across functional boundaries.

2.3 Configuration Control Organization

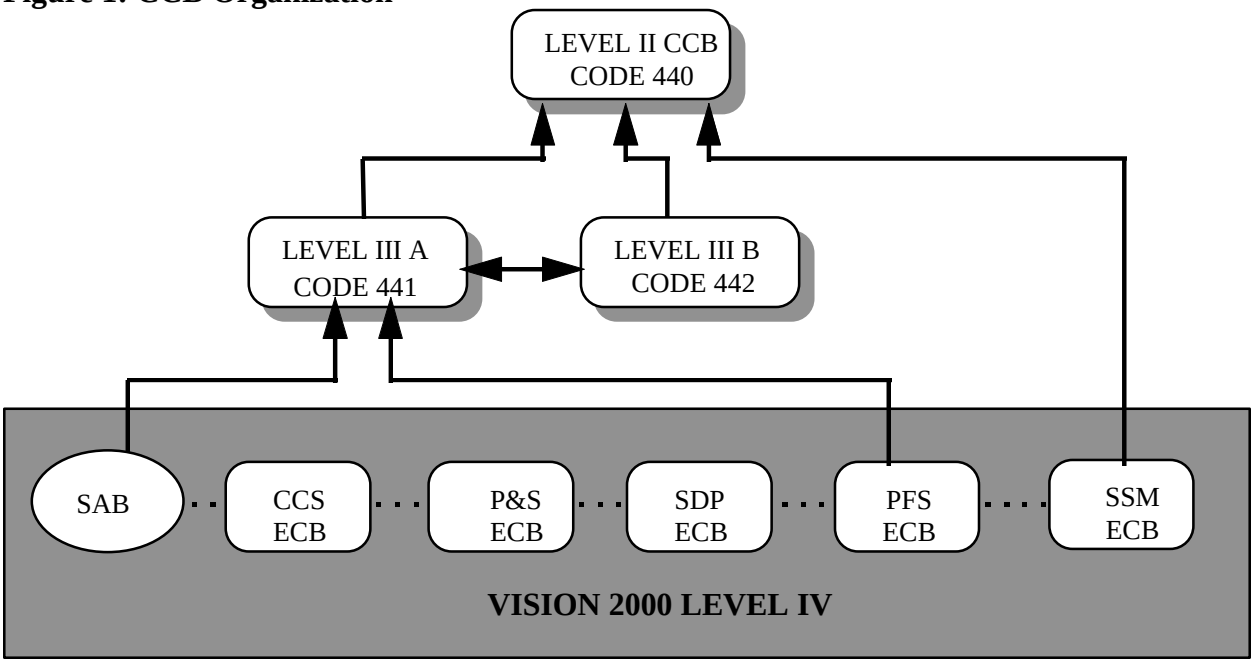
Pre-VISION 2000 change management is organized into a hierarchy based on six Level IV CCBs - Spacecraft Operations (MOSES), Science Operations (ST ScI), Science Development (ST ScI), System Development (MOSES), HSTOMS (Code 510), Flight Software (Code 512) - reporting up to the Level IIIA (Code 441) CCB which in turn reports up to the Level II (Code 440) CCB. In addition, Level IIIA is supported by three operating subpanels, IIIA-1 for NSSC-1 flight software changes, IIIA-2 for Project Data Base changes, and IIIA- 4 for software utilities. A fourth subpanel, IIIA-3 for HST Information System changes has been discontinued. In addition, contractor organizations supporting the HSTOMS tasks maintain Level V CCBs. All change requests are managed by the HST Configuration Management Office (used both by Code 440 and 441) which is responsible for change request distribution, CCB meetings & agenda, status notification and documentation revision. The nominal flow for a change request in the pre-VISION 2000 system is shown in Appendix A. The transmittal of change requests, status and other communications are handled electronically using the HST CM On-Line Processing System (COPS). For changes which require higher level consideration, the results of the lower level boards are transmitted upwards and the process continue. This configuration management approach shall remain in effect for all pre-VISION 2000 Configuration Items and their related documents while they are still in operation. All VISION 2000 Configuration Items and their related documentation shall be managed in conformance with this VISION 2000 Configuration Management Plan.

The organization of the VISION 2000 change control organization within the HST Project is shown in Figure 1. The responsibilities of the Level III A-2 (Project Database) CCB is distributed among the Level IV ECBs as the current ground and flight systems are replaced by VISION 2000 systems. The Level III A-1 CCB is renamed the PFS ECB. Within Code 441, the current Level IV CCBs associated with HSTOMS, DADS/Loral, Science Institute/AURA, and MOC/LMSC-E are replaced by the functional ECBs as shown in Figure 1. The flight software functional areas, SSM, which has responsibility for the DF224/386/486, reports up to Level II, which controls flight software requirements, but technical interface issues are discussed and resolved among the Level IV ECBs or, if necessary, the SAB. . Contractor-based Level V configuration management is subsumed by the Level IV ECBs. The Level IV ECBs are the technical focus for implementation prioritization, change design, and implementation management for Class 2 changes while the SAB serves to control Class 1 changes. The Level III A CCB becomes involved only for changes which:

- Require significant contract modifications
- Require issuance of new tasks or major procurements
- Involve documentation controlled by Level II or III.

Associated with each Level IV ECB is a Configuration Management Officer (CMO) who supports it and is responsible for document maintenance and data management. The Level IV ECBs are organized similarly to the SAB, i.e., they include both technical and operational personnel.

Figure 1: CCB Organization



Legend:

Class 1 changes ———

Technical Interface coordination . . . . . .

2.4 Configuration Identification

The basis of configuration management is the control of documentation related to Configuration Items (CI). A CI is an aggregation of hardware and/or software which satisfies an allocated end-use function. Computer Software Configuration Items, comprised only of software & its documentation (design, source code, etc.), are also designated as CIs for simplicity. All CIs for the HST have been assigned either to the Flight Systems & Servicing Project or the Operations & Ground Systems Project. Appendix A lists the CIs assigned to the Operations & Ground Systems Project including those being either modified or replaced by VISION 2000 systems. The listing indicates the traceability among these two sets. All supporting hardware and/or software used within the functional groups but not listed in Appendix A is considered out of scope of this Plan and changes to them are by definition in Class 3. Under the VISION 2000 concept and as indicated in column 5 of Table 1 in Appendix A, responsibility for CIs within Code 441 is delegated down to the functional groups which have developed them and are maintaining them.

Configuration management in conformance with the respective PDT CM Plan is required after the completion and formal acceptance of each of the VISION 2000 baselines. Baselines characterize the system development phases expressed in terms of specifications or descriptions of elements or systems. The baselines are:

Functional - System and interface requirements
Allocated - Development specifications & ICDs[1]
Product - As built CI descriptions, test results, operational instructions, code description, manuals, etc.

2.5 Controlled Documentation Guidelines

Documentation for CIs, in general, are boarded at Level IV. A listing of all controlled documentation relevant to VISION 2000 is given in Appendix C. The general guidelines for documentation maintenance and boarding are:

- VISION 2000 overall capabilities, schedule & budget are controlled at Level IIIA.
- All derived requirements, system & hardware specifications, design documentation, manuals, and software code are controlled at the functional Level IV
- Interface documentation maintenance is assigned by the SAB to a specific functional group and controlled by the SAB.
- Requirements traceability between the old and VISION 2000 systems are controlled at Level IV with oversight by the SAB.
- Documentation, agreements, memorandum of understanding, etc. among external organizations are controlled at Level II or III, as appropriate.
- The CARD, CARD Implementation, and SITS specifications remain controlled at Level II.

3.0 PROCEDURES

3.1 Configuration Management Process

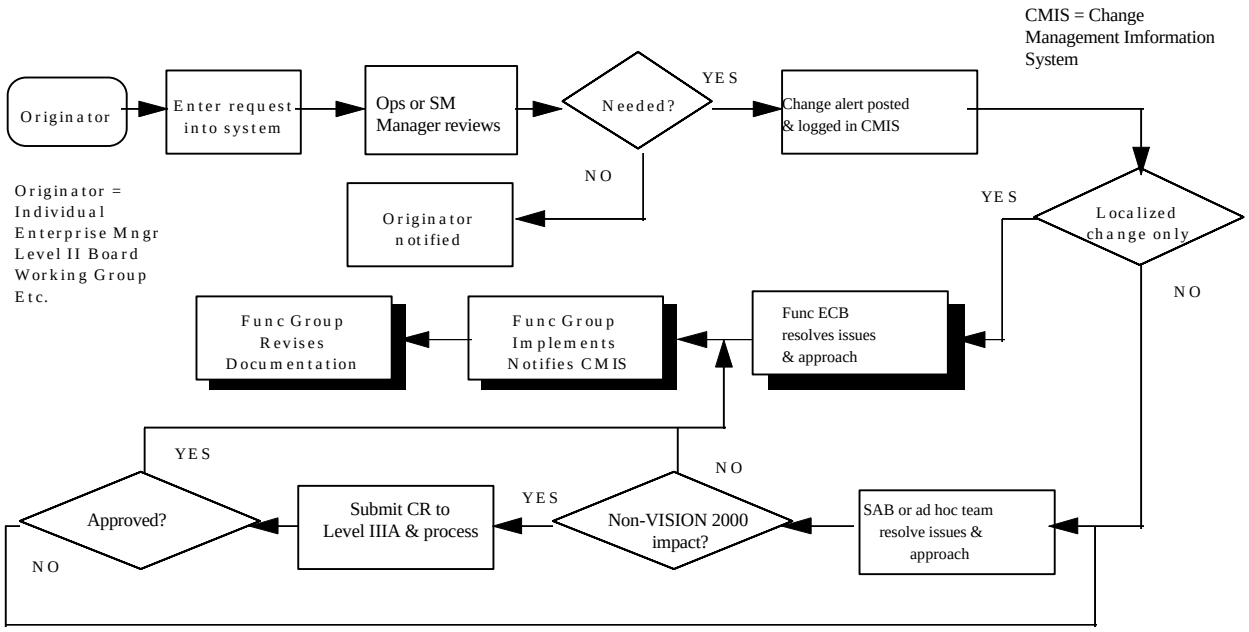
The VISION 2000 change process flow is shown in Figure 2. The CM Information System (CMIS), is utilized to provide a uniform interface regarding change inputs, alerts, status, and disposition. It relies on the use of the Internet for information exchange and provides:

- Logging and identification of the CR
- Change alerts to predefined distribution
- Posting to electronic bulletin boards
- Registering all comments received
- Change status notification to predefined distribution & bulletin boards
- Pointers and access information (metadata) for locating relevant documentation.

Further coordination, if needed, is accomplished by means of the respective CMOs within the functional areas.

[1] Interface Control Documents specify the design which couples two or more CIs together.

Figure 2: Configuration Management Process



The process flow for a proposed change request (CR) is as follows:

1. A CR, along with justification, is submitted by the sponsor (individual, working group, etc.) to the CM systems via the CMIS. The need for change must first be verified by either the Operations or Servicing Mission Manager.

2. The sponsor may withdraw at any time its CR by means of the CMIS. Reason for withdrawal must be included in the request.

3. Once the CR is accepted by the appropriate Manager, the Level IV functional group resolves issues and implements a Class 2 change using its local CM for updating the relevant documentation and CMIS for communicating change status.

4. For a Class 1 change affecting other functional areas (PDTs), the Level IV ECB initiates technical discussions with the impacted group(s) and produces a mutually acceptable approach. For major changes or where unresolved issues arise at Level IV, the SAB assumes responsibility for producing and approving a change implementation plan.

5. Any member of the SAB may request discussion of a posted change request at the next scheduled meeting of the board if the change implies impacts across functional boundaries.

6. For Class 1 changes which cannot be resolved by the respective functional ECBs , the SAB forms an ad hoc technical team to prepare a recommended implementation plan. After plan approval by the SAB, either the ad hoc team or Level IV functional teams implement the change according to the schedule or prioritization assigned.

7. Configuration Change Proposals (CCP) are prepared by the Level IV ECB to alert higher control levels of Class 1 changes which impact external organizations. Level III A CCB procedures and CR submission format applies. The CCP shall contain at a minimum:
   - Change description & justification
   - Approach for implementing change
   - Resource impacts

8. Any change which cannot be accommodated within the resources available to the functional organizations and/or by reprioritization of changes, is referred to the Level III A Board for action and contract change approval. It, in turn, may be required to invoke the Level II CCB for contract impacts across organizational boundaries or which involve Program Operating Plan changes. Changes involving documentation controlled at Level II requires the use of the Level II procedures as described in the Procedures Manual, HST SCM-1023.

9. Level IV CM revises all affected documentation.

Waivers to the prescribed CM process for CIs within VISION 2000 must be authorized by the VISION 2000 Manager.

3.2 Configuration Management Support

Functional groups define and maintain their own application system for supporting their Level IV configuration management and documentation management. However, all change requests, including those which are local to a functional group, are entered and accessible through the common VISION 2000 standard Configuration Management Information System (CMIS).

3.3 Approval Authority

The approval or acceptance of a change request is the responsibility of either the Operations Manager of the Servicing Mission Manager. Approval of the change implementation plan/approach is the responsibility of the PDT Leader for Class 1 changes within VISION 2000 and Class 2 changes unless the Class 1 change is referred to the SAB. Approval is then by the VISION 2000 Technical Manager. Class 1 changes involving the Level II or III CCBs, are authorized by the respective CCB Chair following current procedures. The respective Level IV ECB and the CMO are responsible for tracking and approving the implemented change.

3.4 Configuration Status Accounting

A Configured Articles List (CAL) is maintained by each functional group adequate to firmly identify and establish the current baseline configuration of all CIs administered by the functional group. The changes to the CI are automatically recorded into the CMIS during its application in the change process. The CAL shall contain at a minimum:

- CI nomenclature
- Latest specifications
- Applicable ICD and Reference Databases
- Location of items

Level IV CMOs are responsible for maintaining the CAL current.

3.5 Change Verification

The Level IV CMO within each functional group has the responsibility for ensuring that changes to the CIs and their documentation have been incorporated. This verification includes:

- Change incorporation into build or release requirements & test specification
- Recertification of changes to reference data bases
- Software code changes analyzed for completeness
- Revised software has undergone appropriate testing
- Revised software has been released

3.6 Audits

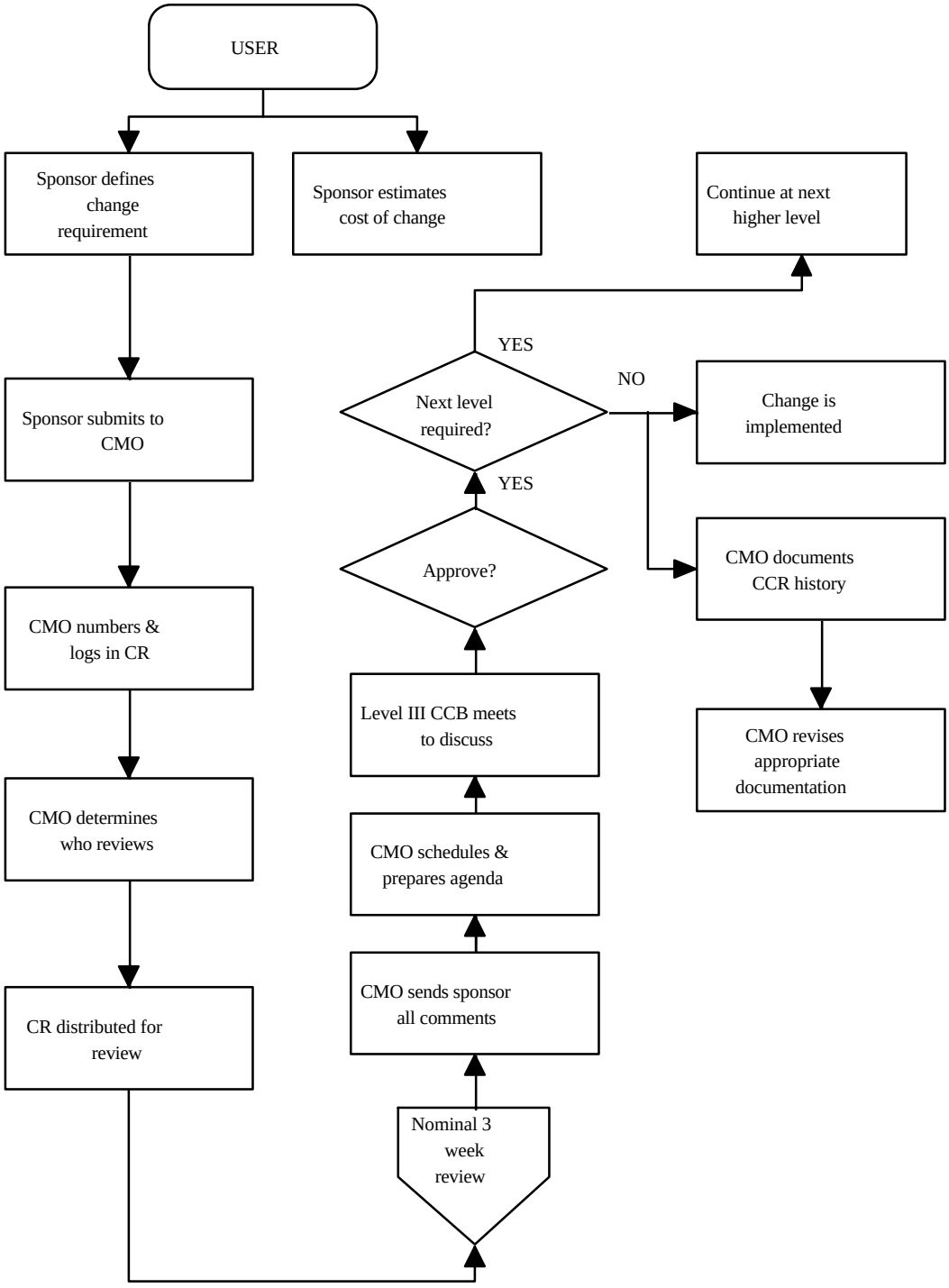
Audits are accomplished by the Level IV CMO as part of the change verification process. The VISION 2000 Chief Engineer audits procedures for compliance of Level IV with this Plan periodically or when procedural changes have been introduced

3.7 Documentation Maintenance

All documents within VISION 2000 are controlled and maintained by the assigned functional group utilizing the native configuration & data management system resident with the group. A document summary, along with key words to facilitate relational searches, shall be provided for uniform access via the CMIS. Documents associated with CIs are registered with the HST Code 440 CMO and receive an identification number appropriate to its category.

An electronic copy of each document, properly annotated and current following revision, is transmitted to the HST Document Repository managed by the HST Code 440 CMO. However, working copies are accessed directly from the functional group documentation library using tools provided within CMIS.

APPENDIX A: Pre-VISION 2000 Change Process Flow



APPENDIX B Configuration Items

Table 1 lists all Configuration Items allocated to the HST Operations & Ground Systems Project. Items 1-28 are those identified in the HST Configuration Management Plan and represent pre-VISION 2000 system configurations. Items 29-36 are either new CIs or replacement systems being implemented within the scope of VISION 2000. All CIs (1-28) were originally controlled at Level III. Any reallocation is shown in the column E and the responsible functional group in the column F.

Table 1: Configuration Items

Columns refer to: (A) item number, (B) CI name, (C) subsystem acronym, (D) action, (E) boarded level, (F) responsibility by functional area, and (G) notes.

A	B	C	D	E	F	G
1	Astrometry Engineering Data Processing	AEDP	Delete	III		In CCS
2	POCC Operations Real Time Support	PORTS	Delete	III		In CCS
3	POCC Application Software Support	PASS	Delete	III		In P&S and CCS
4	Science Operations Ground System	SOGS	Delete	III		In SDP
5	Payload Operations & Data Processing System	PODPS	Delete	III		In SDP, now OPUS
6	Science Data Capture Facility	DCF	Delete	III		Now PACOR II shared facility in Code 500
7	Project Data Base	PDB	Delete	III		Now PRD
8	ESS		Delete	III		In CCS
9	DF-224/386 Flight Software			IV	SSM	Maintained until SM3
10	NSSC-I Flight Software			IV	PFS	
11	GSE for SI C&DH			IV	PFS	
12	Data Archive & Distribution System	DADS	Replace	IV		Now Hubble Data Archive
13	Archive User Interface	StarView	Replace	IV		Now Hubble Data Archive
14	Monitor & Science Instrument Simulator	MASIS		IV	PFS	
15	Extended Software Test & Integration Facility	ESTIF		IV	SSM	
16	DF224 Analysis & Software Development Facility	DASDF		IV	SSM	
17	SI Flight Software (after launch)			IV	PFS	SI Flight Software (after launch)
18	VEST TAC Hardware			IV	CCS	Replace: VEST CCS Hardware
19	VEST PDF			III		
20	VEST NASCOM lines			III		
21	VEST PORTS Software			IV	CCS	Replace: VEST CCS Software
22	VEST PASS Software			IV	P&S	Replace: VEST P&S Software
23	VEST ESTIF Software			?	?	
24	VEST PCS Simulator Software			?	?	
25	VEST FGS Simulator Software			?	?	
26	VEST MASIS Software			IV	PFS	
27	VEST HST Simulator Software			?	?	
28	VEST PDB			IV		Replace: VEST PRD
29	486 Flight Software			IV	SSM	
30	Control Center System			IV	CCS	
31	Planning & Scheduling System			IV	P&S	
32	Science Data Processing System	OPUS		IV	SDP	
33	Hubble Data Archive	HDA		IV	SDP	
34	Project Reference Data	PRD		IV	Note	Allocated among CCS, SDP, P&S, SSM, PFS
35	Configuration Management Interface System	CMIS		IV	CCS	
36	VISION 2000 Communication Network			IV	?	VisionNet

APPENDIX C: Controlled Documents Relevant to VISION 2000

List is being compiled.

APPENDIX D Acronym List

ACRONYM	DEFINITION	NOTES
AC	Advanced Camera	HST camera to be installed during SM99
ACS	Advanced Camera Surveyor	
AEDP	Astrometry & Engineering Data Processor	
API	Applications Interface	
AT	Acceptance Test	
ATM	Asynchronous (data) Transfer Mode	
ATSC	Alliedsignal Technical Services Corp.	
BB	Brass Board	
CAL	Configuration Article List	
CCB	Configuration Control Board	
CCM	CCS Control Management	
CCR	Configuration Change Request	
CCS	Control Center System	VISION 2000 Product Development Team
CDBS	Calibration Data Base System	
CDF	Common Data Format	
CDR	Critical Design Review	
CHAMP	Consolidated HST Associated Mission Product	
CI	Configuration Item	
CL	Command Loader	
CM	Configuration Management	
Cmd	Command	
CMIS	Configuration Management Information System	
CMO	Configuration Management Officer	
CMS	Code Management System	
CNMOS	Consolidated Network & Mission Operations Support	
COCOMO	Constructive Cost Model	B.Boehm (TRW)
CODE 440	HST Office	Overall management of HST
CODE 441	HST Operations & Ground System Project	Responsible for spacecraft and science operations
CODE 442	HST Flight Systems & Servicing Project	Responsible for refurbishment & enhancement of HST flight systems
CODE 510	Mission Operations & Systems Development Division	
CODE 512	Flight Software Systems Branch	
COPS	CM On-Line Processing System	Pre-VISION 2000 electronic support for CM
COTS	Commercial Off The Shelf	
CPI	Continuous Process Improvement	Reengineering technique devised by Tatham Process Eng., Inc.
CR	Change Request	
CRC	Cyclical Redundancy Check	
CS	Civil Servant	
CSC	Computer Science Corporation	
CSOC	Consolidated Space Operations Contract	
CTA	Computer Technology Associates	
DADS	Data Archive & Distribution System	

DASDF	DF224 Analysis And S/W Development Facility	
DCF	Data Capture Facility	
DCR	Design Confirmation Review	
DFD	Data Flow Diagram	
DLP	Derived Logical Process	CCS logical functional flow
DMF	Data Management Facility	
DOC	Data Operations Center	Central computer hardware switching system
DSN	Deep Space Network	
DSTIF	DF224 S/W Test And Integration Facility	
DW	Data Warehouse	
ECB	Engineering Change Board	Technical equivalent of CCB
ECL	EOS Control Language	
ECS	EOSDIS Core System	
EOS	Earth Observing System	
EOSDIS	EOS Data Information System	
EPS	Electrical Power System	
ESS	Engineering Support System	Spacecraft telemetry data analysis system
ESTIF	Extended Systems Test And Integration Facility	
ETR	Engineering Tape Recorder	
ETU	Engineering Test Unit	
EU	Engineering Unit(s)	
EUVE	Extreme Ultraviolet Explorer	
FDDI	Fiber Distribution Data Interface	
FDF	Flight Dynamic Facility	
FEP	Front End Processor	
FGS	Fine Guidance System	
FHST	Fixed Head Star Tracker	
FITS	Flexible Image Transport System	
FOC	Faint Object Camera	ESA science instrument
FOF	Front End Processor Output Format	
FOT	Flight Operations Team	Spacecraft command & monitoring operators
FRR	Flight Readiness Review	
FTE	Full Time Equivalent Manpower	
FTR	Flight Transition Review	
GOTS	Government Off The Shelf	Equivalent to government furnished equipment/software
GSFC	Goddard Space Flight Center	
GSSS	Guide Star Selection System	
GTO/GO	Guaranteed Time Observer/General Observer	
GUI	Graphical User Interface	
H&S	Health & Safety	
HDA	Hubble Data Archive	Formerly ST Data Archive & Distribution System
HGA	High Gain Antenna	TDRSS antennae on HST
HST	Hubble Space Telescope	
HSTOMS	Hubble Space Telescope Observatory Management System	
HSTP	HST Project	
I&T	Integration & Test	
I/F	Interface	
I/O	Input/Output	

IDP	Integrated Development Plan	Master plan for VISION 2000 = Mgmt Plan
IMACCS	Integrated Monitor, Analysis & Control COTS System	Prototype control center system software for small missions.
IPS	Integrated Planning System	System being developed by the P&SS PDT
ISP	Information Sharing Protocol	JSC network development
ITAV	Independent Test And Verification	
JIS	Joint Integrated Simulation	
LAN	Local Area Network	
LGA	Low Gain Antenna	
LOC	Lines of Code	
LoTTS	Long Term Trending System	Engineering telemetry data analysis tool
LRP	Long Range Planning	
MEGG	Mission Event Graphics Generator	
MMS	Module Management System	
MOPSS	Mission Operations Planning & Scheduling System	
MOR	Mission Operations Room	Control center
MOSES	Mission Operations, System Engineering, & Software	Contract for HST operations with Lockheed-Martin
MOSS	Moving Object Scheduling System	
MS	Mission Scheduler	
MTTR	Mean Time To Repair	
NASCOM	Nasa Communications Network	
NBB	Nations Bank Building	Lockheed-Martin location
NCC	Network Control Center	
NGT	Nasa Ground Terminal (White Sands, New Mexico)	
NICMOS	Near Infrared Camera And Multi-Object Spectrometer	
NSSC	NASA Standard Spacecraft Computer	
O&GSP	Operations And Ground Systems (Project)	
O&M	Operations & Maintenance	
O-O	Object Oriented	
OCWG	Operations Concept Working Group	Feasibility panel
ODB	Operational Data Base	
OMS	Observatory Monitoring System	
OPUS	OSS/PODPS Unified System	Combined real-time and off-line science data processing system
ORI	Orbital Replacement Instrument	
ORU	Orbital Replacement Unit	
OSS	Observational Support System	Real-time science instrument control system
P&S(S)	Planning & Scheduling System	VISION 2000 Product Development Team
PACOR	Packet Processor	Level 0 packet processing of science data
PASS	POCC Application Software Support	Task name
PASS	POCC Applications Software	Off-line control center support system
PASSOPS	PASS Operators	
PB	Performance Based	
PDB	Project Data Base	Master reference data base for spacecraft operations
PDR	Preliminary Design Review	
PDT	Product Development Team	
PEP	Proposal Entry Processor	
PFS	Payload Flight Software	VISION 2000 Product Development Team
PMDB	Proposal Management Data Base	

POC	Proof of Concept or Point of Contact	
POCC	Payload Operations Control Center	For HST, entitled STPOCC
PODPS	Post Observation Data Processing System	Pipeline processing system for science data at ST ScI
PORTS	POCC Operations Real-Time Support	Spacecraft health & safety monitoring and command system
PRD	Project Reference Data	a.k.a. Project Data Base
PRESTO	Project To Reeengineer ST Observing	CPI team at ST ScI
PRF	PSTOL Recertification Facility	
PRS	PORTS Refurbishment System	
PSS	Portable Spacecraft Simulator	
PSTOL	PORTS System Test & Operation Language	Basic command language
R/T	Real-Time	
RIP	Release Integration Plan	
RPS2	Remote Proposal Support System	For Science proposals
RWA	Reaction Wheel Assembly	
S/C	Spacecraft	
S/W	Software	
SAB	System Architecture Board	Provides cross-team system engineering
SAMS	Support And Maintenance System	Test and back-up control center system
SDP	Science Data Processing (System)	VISION 2000 Product Development Team
SEAS	System Engineering, Analysis Support Service	Support contract for Mission Operations & Data Systems Directorate
SG	Steering Group	Management oversight body for VISION 2000
SI	Science Instrument	
SIM	Simulation	
SITS	Science Instrument Test System	Development tool used to emulate command and monitoring functions
SM	Servicing Mission	
SM/PART	Servicing Mission/Planning & Replanning Tool	
SM3	3rd Servicing Mission	
SM97	2nd Servicing Mission	= SM2
SM99	1999 Servicing Mission	= SM3
SMGT	Servicing Mission Ground Test	
SMOV	Servicing Mission Observatory Verification	On-orbit commissioning activities
SMS	Science Mission Specification	Detailed, time ordered command specification for spacecraft
SOGS	Science Operations Ground System	
SPIF	Shuttle Payload Interface Facility	
SPIKE	Science Planning Interactive Knowledge Environment	Application for planning science observations
SPSS	Science Planning And Scheduling System	
SSM	System Support Module	Lockheed-furnished HST spacecraft
SSM (F S/W)	System Support Module Flight Software	VISION 2000 Product Development Team
SSR	Solid State Recorder	
ST DADS	St Data Archive & Distribution System	Now called the Hubble Data Archive when StarView (user I/F) is included.
ST ScI	HST Science Institute	
StarView	Hubble Data Archive User Interface	
STIS	Space Telescope Imaging Spectrograph	
STOCC	Space Telescope Operations Control Center	
STS	Short-Term Scheduling	
STSDAS	Space Telescope Science Data Analysis	

	Software	
SYM	System Monitor	CCS subsystem
TALOS	A Greek Oracle (improved tlm display)	
TAV	Test & Verification	
TBD	To Be Determined	
TCL	Tool Command Language	
TDA	Top Down Architecture	
TDF	Telemetry Distribution Format	
TDRSS	Tracking Data Relay Satellite (System)	
TK	Toolkit	
Tlm	Telemetry	
TOO	Target Of Opportunity	
TRANS	Transformation	Science proposal translator
TRR	Transition Readiness Review	
TTFWG	Test & Test Facilities Working Group	
UPS	User Planning System	Interface to NCC for scheduling TDRS
UTC	Universal Time Code	
VEST	Vehicle Electrical Systems Test (Facility)	
VLAN	Virtual Local Area Network	
VSTIF	Vest Software Test & Integration Facility	
WSC	White Sands	
WSGT	White Sands Ground Terminal	
WWW	World Wide Web	
XTE	X-Ray Timing Explorer	